



474147

**SOP M - Post-Remediation Inspection Procedures**
**KING HIGHWAY LANDFILL  
POST-REMEDIATION INSPECTION FORM**

Inspection Date: 11/8/2012 Weather Conditions: Overcast, 30's, light wind  
 Inspectors: M. Kohagen  
 Time Arrived: 12:00 ( AM / PM ) Time Departed: 4:00 ( AM / PM )

Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo Nos.
	Yes	No			
Cover System					
Settlement	X		Strip the soil, place and compact suitable soils within the depression, and replace excavated soil. Once the proper slope is restored, reseed the disturbed area.		
Water Ponding	X		Strip the soil, place and compact suitable soils within the depression, and replace excavated soil. Once the proper slope is restored, reseed the disturbed area.		
Soil Erosion	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth.		
Slope Movement/ Failure	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth.		
Exposed FML		X	Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth.	A small 6-inch by 12-inch area of exposed geosynthetics was observed near gas vent V-2-3. Next spring this area of exposed geosynthetics will be covered with fill and topsoil and the area seeded and mulched to facilitate vegetative growth.	4
Undesirable Growth (Rooty Trees or Shrubs)	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth.		
Protruding Objects	X		Regrade or place additional appropriate materials in affected areas and promptly reseed to establish vegetative growth.		
Burrowing Animals	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth.		
Cracks	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth.		
Disturbance or Loss of Vegetation	X		Reseed areas of lost vegetation. Do not allow vegetation (except for grasses) to establish on the cover.		

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<b>Sedimentation Basin and Drainage Outlet</b>					
Erosion	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth.		
Siltation	X		Remove excessive sediment buildup that has caused filling of the basin bottom to elevations above the design elevation (e.g., design elevation near outlet structure is 764.5 feet).		
Debris Buildup	X		Remove debris washed out materials.		
Condition of Discharge Structures & Inlets	X		Remove any debris or obstructions/blockages. Indicate corrective measures for damaged inlet or discharge structures.		
Inappropriate Vegetation	X		Only grass will be allowed to establish on the cover. Roots of trees and shrubs will be cut out. Inspect the area every 2 weeks following removal to ensure that root systems have not returned.		
<b>Ditches and Diversion Berms</b>					
Siltation	X		Remove excessive sediment buildup.		
Debris Buildup	X		Remove debris washed out materials.		
Disturbed Vegetation	X		Reseed areas of lost vegetation.		
Erosion		X	Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth.	A small area of soil on the slope adjacent to gas vent V-1-2 has sloughed down the slope possibly due to water accumulating in the drainage way located along the south side of the landfill. Next spring this area will be brought back to the appropriate elevation by the addition of topsoil within the eroded area. The area will be reseeded and mulched to facilitate vegetative growth and promote soil stability. The drainage way will be regraded to prevent water from accumulating prior to repair of the sloughed area.	1
<b>Culverts</b>					
Siltation	X		Remove excessive sediment buildup.		

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Clogging	X		Remove any debris or obstructions/blockages obstructing flow through the culvert.		
<b>Riprap, Sheet pile Wall, and Erosion Control Blankets</b>					
Instability or Damage	X		Regrade or place additional appropriate materials (e.g., riprap, topsoil) in affected areas and promptly reseed where necessary to establish vegetative growth. Replace erosion control blankets if damaged. Note damage to sheet pile wall.		
<b>Sheet pile Wall</b>					
Soil Erosion, Subsidence, or Cracking Behind Wall	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth.		
Wall Joints	X		Note any gaps in the wall joints and any material migration from behind the wall.		
Overall Wall Stability	X		Note whether the top of the wall has been displaced outward. Note any holes in the wall caused by corrosion.		
<b>Surface Water and Pore Water Collection System</b>					
Clogging of Outlets	X		Remove any debris or obstructions/blockages obstructing flow through the pipe.	Water was observed to be discharging freely from the north pore water pipe.	2
Evidence of Settlement/Exposed Materials	X		Regrade or place additional appropriate materials in the affected areas and promptly reseed to establish vegetative growth.		
Condition of Inlet/Outlets		X	Replace or repair pipes that have been damaged such that flow is obstructed.	The southern pore water discharge pipe, which was previously extended to the western rip rap apron during the recent final cover system repairs, was observed to be under ponded water. The south pore water pipe will be relocated so that the pipe outlets further up the slope over the area of rip rap over the next several months.	3
<b>Landfill Gas Management System</b>					
Condition of Exterior Vent Pipe Components	X		Replace broken/damage vent pipes. Exposure of geomembrane pipe boot above the ground surface should be noted, as well as any damage to the pipe boot.		
Condition of Exterior Gas Probe Components	X		Replace broken/damage gas probes or components.		



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	Yes	No			
Evidence of Differential Settlement <sup>1</sup>	X		Replace vent pipes or gas probes with severe leans or where underground components are observed above ground.		
Operation of Wind Turbine Ventilators	X		Repair or replace wind turbine ventilators that are not turning or have been broken/damaged.	The wind turbine on gas vent V-1-4 was observed to be loose. The wind turbine was secured to the gas vent with a couple of screws.	
<b>Groundwater Monitoring System</b>					
Condition of Surface Seal and Pipe Boot	X		Replace or repair the concrete surface seal as necessary. Exposure of geomembrane pipe boot above the ground surface should be noted, as well as any damage to the pipe boot.		
Condition of Protective Casing	X		Replace damaged protective casings.		
Condition of Cap	X		Replace damaged caps.		
Condition of Locks	X		Replace locks where missing or damaged.		
Integrity of Exterior Well Components	X		Replace broken/damaged monitoring wells.		
<b>Site Access Roads</b>					
Condition of Roadways	X		Regrade or place additional appropriate materials (e.g., gravel) in depressions to maintain proper drainage and even roadway surface.		
Conditions of Access Gates	X		Replace or repair damaged gates. Reattach mesh fencing that has pulled away from the top rail.		
<b>Security Systems</b>					
Condition of Fencing		X	Replace or repair damaged fencing. Removed trees or branches that have fallen onto fencing. Clear vegetation away from fencing. Reattach mesh fencing that has pulled away from the top rail.	Barbwire fence was observed to be missing from an approximate 20 foot section of the perimeter fence in the northwest corner of the landfill. The barbed wire was removed during work associated the City sanitary project. The fence will be repaired by the city and a gate installed once the Access Agreement between GP and the city is completed (expected to be signed in late December 2012). Additionally, vegetative growth along the fenceline will be cleared in the coming months.	

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Inspection Items	Condition Satisfactory		Response	Comments/Proposed Action Items	Photo Nos.
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Condition of Signs	X		Replace or repair missing or damaged signs to eliminate trespassing.		
Condition of Locks		X	Replace missing or damaged locks.	A new lock was placed on the man gate on the west side of the property, as the current lock was observed to be damaged.	

**Notes:**  
1. Evidence of differential settlement includes heaving around vent pipes and/or gas monitoring probes, leaning vent pipes and/or gas monitoring probes, and underground components of vent pipes and/or gas probes exposed above ground surface.

**Additional Remarks:**

Vegetation is now dormant due to the change in the weather condition, which inhibited our ability to gauge the stress of the vegetation. Recently repaired areas of stressed vegetation has been seeded, fertilized, and mulched. A 55 gal drum was found between the KHL OU and Kalamazoo Metal Recycler properties. The drum was determined to belong to the City of Kalamazoo. The City has been notified and will remove the drum from the KHL OU property.





Photo No. 1: This photo shows gas vent V-1-2 and the area of erosion on the slope adjacent to the gas vent.



Photo No. 2: This photo shows the free flowing water discharging from the north pore water pipe.





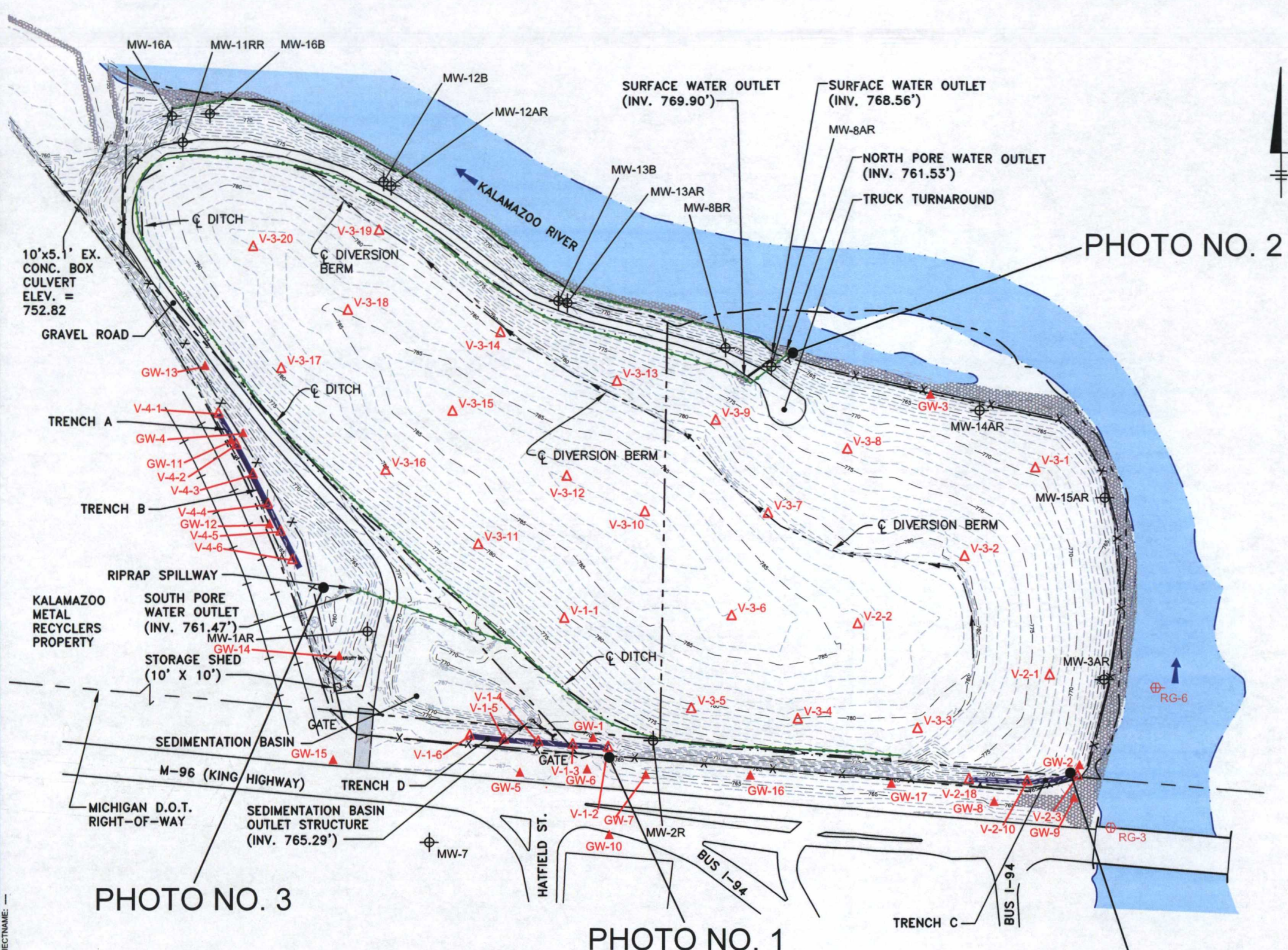
Photo No. 3: Photo shows the south pore water pipe submerged under ponded water in the settling basin near the southwest corner of the KHL.



Photo No. 4: This photo shows the area of exposed geosynthetics adjacent to gas vent V-2-3 near the southeast corner of the KHL.



CITY: SYRACUSE DIV/GROUP: ENV/CAD DB: G. STOWELL L. POSENAUER L. FORAKER LD: PIC/D. COWIN PAK D. PENNIMAN TM: D. PENNIMAN LTR: ON: OFF-REF: 10/22/2012 8:32 AM BY: FORAKER, LYDIA  
G:\ENV\CAD\SYRACUSE\ACT\B0064583\000907DWG\COMPLETE\B0064583B03.DWG LAYOUT: 3 SAVED: 10/22/2012 8:32 AM ACADVER: 18.1 (LMS TECH) PAGES: 18  
XREFS: 64583000 64583001  
IMAGES: PROJECTNAME: -



- LEGEND:**
- APPROXIMATE PARCEL BOUNDARY
  - - - DITCH LINE
  - - - ABANDONED RAILROAD
  - SHEETPILE WALL
  - ACCESS ROAD
  - RIPRAP
  - CULVERT PIPE
  - FINAL AS-BUILT INDEX CONTOUR
  - FINAL AS-BUILT INTERMEDIATE CONTOUR
  - X- SECURITY FENCE
  - PORE WATER COLLECTION PIPE
  - PORE WATER DRAIN
  - APPROXIMATE WATER EDGE
  - V-1-2 GAS VENTS
  - LANDFILL GAS CUTOFF TRENCH
  - FLOW DIRECTION
  - MW-14 MONITORING WELL
  - RG-3 FORMER RIVER GAUGE STATION (NO LONGER IN USE)
  - GW-2 LOCATION OF GAS MONITORING PROBES

- NOTES:**
1. BASE MAP INFORMATION OBTAINED FROM CADD DRAWING FILE DEVELOPED BY RMT, INC., ANN ARBOR, MICHIGAN (CADD FILE: L1630SU01.DWG AS-BUILT SURVEY; 8/21/00).
  2. FINAL AS-BUILT CONTOUR ELEVATIONS ARE SHOWN AND ARE BASED ON A FIELD SURVEY BY ATWELL-HICKS, INC., DATED 9/27/00 WITH REVISIONS DATED 10/23/00, 12/21/01, 12/10/02, AND 7/24/03.
  3. ELEVATIONS ARE BASED ON NGVD OF 1929 (MSL).
  4. PROPERTY SURVEY PERFORMED BY WILKINS & WHEATON ENGINEERING CO., INC., ON 7/1/96.
  5. TOPOGRAPHIC CONTOUR INTERVAL IS 1 FOOT.
  6. LOCATIONS OF GW-5, GW-6, GW-7, GW-8, GW-9, AND GW-10 ARE BASED ON A FIELD SURVEY BY TERRA CONTRACTING LLC, DATED 9/23/05.
  7. LOCATION OF GW-11 IS BASED ON A FIELD SURVEY BY TERRA CONTRACTING LLC, DATED 1/11/06.
  8. LOCATIONS OF RG-6, V-4-4, V-4-5, AND V-4-6 ARE BASED ON A FIELD SURVEY BY TERRA CONTRACTING LLC, DATED 6/7/06.
  9. LOCATIONS OF V-1-2 THROUGH V-1-6, V-2-3, V-2-10, AND V-2-18 ARE BASED ON MULTIPLE FIELD SURVEYS CONDUCTED BY TERRA CONTRACTING, LLC. IN APRIL 2008. GAS VENTS V-2-4 THROUGH V-2-9, AND V-2-11 THROUGH V-2-17 ARE NOT SHOWN FOR CLARITY PURPOSES (THESE VENTS ARE LOCATED ALONG TRENCH C).
  10. LOCATION OF GW-12 IS APPROXIMATE.
  11. LOCATIONS OF GW-13 THROUGH GW-17 BASED ON FIELD SURVEY CONDUCTED BY PREIN & NEUHOFF ON 11/1/11.

ALLIED PAPER, INC./PORTAGE CREEK/  
KALAMAZOO RIVER SUPERFUND SITE

LANDFILL INSPECTION REPORT

KHL SITE PLAN

**ARCADIS**

FIGURE  
1





Infrastructure · Water · Environment · Buildings

ARCADIS of New York, Inc.

6723 Towpath Road

P O Box 66

Syracuse

New York 13214-0066

Tel 315 446 9120

Fax 315 449 0017

# Transmittal Letter

To:  
Keith M. Krawczyk  
Project Coordinator  
MDEQ – Remediation Division  
Superfund Section  
Constitution Hall  
P.O. Box 30426  
Lansing, MI 48909-7926

Copies:  
Garry Griffith, P.E., Georgia-Pacific LLC  
(transmitted via e-mail)  
Michael Berkoff, USEPA Region 5  
Steve Taplin, Terra Contracting, LLC  
(transmitted via e-mail)  
Dawn Penniman, P.E., ARCADIS  
Michael Kohagen, ARCADIS  
(transmitted via e-mail)

From:  
Pat M. McGuire

Date:  
December 5, 2012

Subject:  
King Highway Landfill OU – 2012 4<sup>th</sup>  
Quarter Landfill Inspection Report

ARCADIS Project No.:  
B0064583.0003.00907

## We are sending you:

☒ Enclosed

☐ Under Separate Cover Via \_\_\_\_\_ the Following Items:

☐ Shop Drawings

☐ Plans

☐ Specifications

☐ Change Order

☐ Prints

☐ Samples

☐ Copy of Letter

☒ Reports

☐ Other: \_\_\_\_\_

Copies	Description	Action*
1	2012 4 <sup>th</sup> Quarter Landfill Inspection Report	FR

## Action\*

☐ A Approved

☐ CR Correct and Resubmit

☐ Resubmit \_\_\_\_\_ Copies

☐ AN Approved As Noted

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☐ Return \_\_\_\_\_ Copies

☐ AS As Requested

☐ FA For Approval

☐ Review and Comment

☒ Other: FR – For Your Review

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☒ FedEx Standard Overnight

☐ FedEx Economy

☐ Other: \_\_\_\_\_

Comments: Enclosed is the 2012 4<sup>th</sup> quarter landfill inspection report. Please feel free to contact me at 315.671.9233 or Pat.McGuire@arcadis-us.com if you have any questions.